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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/829,023	04/20/2004	Albert Hasper	ASMINT.017C1	5975

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KNOBBE MARTENS OLSON & BEAR LLP  
2040 MAIN STREET  
FOURTEENTH FLOOR  
IRVINE, CA 92614

EXAMINER
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TSAI, CAROL S W

ART UNIT	PAPER NUMBER
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2857

DATE MAILED: 09/10/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/829,023	<b>Applicant(s)</b> HASPER, ALBERT	
	<b>Examiner</b> Carol S Tsai	<b>Art Unit</b> 2857	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 20 April 2004.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-8, 13-27 and 30 is/are rejected.
- 7) ☒ Claim(s) 9-12, 28 and 29 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 April 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)             | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                                    |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1-5, 18, 19 and 22-24 are rejected under 35 U.S.C. 102(e) as being anticipated by U. S. Publication 2002/0055801 to Reiss et al.

With respect to claims 1 and 18, Reiss et al. disclose a system for monitoring consumption of utilities by semiconductor fabrication processes, comprising: at least one semiconductor process tool (semiconductor fabrication tool 1002 shown on Fig. 10) comprising at least one process-control device (first sensor 1008 and second sensor 1010 shown on Fig. 10) for controlling process at least one process condition within the process tool; at least one tool controller (controller 1012 shown on Fig. 10) communicating with the at least one process-control devices according to a process recipe for treating workpieces within the process tool; and computer software residing in a memory (memory 1014 shown on Fig. 10) of said tool controller, the computer software configured to sample values of a parameter from at least one process-control device, wherein the values reflect actual resource consumption of a consumable, and configured to sum the sampled values of the parameter so as to obtain a value of a cumulative

Art Unit: 2857

resource consumption of the consumable and configured to store the values of the cumulative resource consumption (see Figs. 2, 7, 9, and 10 and paragraphs 0002, 0039, 0042, 0043, 0063, and 0081-0086).

As to claims 2 and 3, Reiss et al. also disclose at least one heating element and at least one mass flow controller (see paragraphs 0063-0065).

As to claims 4 and 5, Reiss et al. also disclose inputs originating from the at least one process-control device and fed back into the at least one tool controller (see paragraphs 0042-0050).

As to claims 19, 22, and 23, Reiss et al. also disclose a method of determining resource consumption on a semiconductor process tool, the method comprising: monitoring electronic inputs and outputs controlling a semiconductor process recipe and calculating resource consumption from said inputs and outputs, wherein monitoring and calculating are performed on the semiconductor process tool (see Figs. 10 and paragraphs 0002, 0063, 0041-0050, 0085, and 0086).

As to claim 24, Reiss et al. also disclose applying a calibration factor (weights 126 shown on Fig. 1B) to the outputs to arrive at the resource consumption data (see paragraph 0053).

As to claims 25-27, Reiss et al. also disclose determining total resource consumption for each of a plurality of successive time intervals (see Figs. 2, 7, and 9 and paragraphs 0081-0083).

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 6-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Reiss et al. in view of U. S. Patent No. 5,586,039 to Hirsch et al.

As noted above, with respect to claims 6 and 7, Reiss et al. disclose the claimed invention, except for the computer software comprising an editor configured to select user-defined parameters for monitoring.

Hirsch et al. teach the computer software comprising an editor configured to select user-defined parameters for monitoring (see Figs. 2-19).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Reiss et al.'s method to include the computer software comprising an editor configured to select user-defined parameters for monitoring, as taught by Hirsch et al., in order to provide the user with the operation of manipulating data with selected user-defined parameters via a display GUI.

As to claim 8, Reiss et al. also discloses the user-defined parameters selecting from the group consisting of process gas flow, purge gas flows, electrical power consumption, and cooling water flows (see paragraphs 0002 and 0063-0065).

5. Claims 13-17 and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Reiss et al. in view of U. S. Patent No. 5,586,059 to Oshelski et al.

Art Unit: 2857

As noted above, with respect to claims 13-17 and 30, Reiss et al. disclose the claimed invention, except for a report generator configured to generate resource consumption reports relating to user-selected ones of parameters being sampled for consumption of resources.

Oshelski et al. teach a report generator configured to generate resource consumption reports relating to user-selected ones of parameters being sampled for consumption of resources (see Fig. 9 and col. 8, lines 19-40).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Reiss et al.'s method to include a report generator configured to generate resource consumption reports relating to user-selected ones of parameters being sampled for consumption of resources, as taught by Oshelski et al., in order that report with summed parameter values can be used for further analysis.

6. Claims 20 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Reiss et al. in view of U. S. Patent No. 6,368,975 to Balasubramhanya et al.

As noted above, Reiss et al. disclose the claimed invention, except for said inputs and outputs including analog/digital signals.

Balasubramhanya et al. teach said inputs and outputs including analog/digital signals (see col. 14, line 64 to col. 15, line 2).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Reiss et al.'s method to including said inputs and outputs include analog/digital signals, as taught by Balasubramhanya et al., in order that input

Art Unit: 2857

and output including either analog signals or digital signals can be flexibly processed by the semiconductor wafer processing tool.

***Allowable Subject Matter***

7. Claims 9-12, 28 and 29 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Conclusion***

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Arackaparambil et al. disclose a novel distributed factory system framework including a novel factory automation lifecycle having lifecycle activities for SW developing and integrating, installing and administrating, factory modeling, manufacturing planning, manufacturing controlling, monitoring and tracking and analyzing of manufacturing results.

Dor et al. disclose a method and associated apparatus for creating defect knowledge library containing case study information of wafer defects on semiconductor wafers.

Mendez et al. disclose a system and method for predicting software models used in chemical mechanical polishing (CMP) of workpieces using material-centric process instrumentation.

Moore et al. disclose connecting semiconductor processing tools in a

Art Unit: 2857

semiconductor processing facility to communicate with a power management system.

Dible discloses a power delivery system for providing energy to sustain a plasma in a plasma-processing chamber configured for processing substrates.

Rice et al. disclose apparatus and method for attaining repeatable temperature versus time profiles for plasma heated interactive parts used in mass production plasma processing.

### ***Contact Information***

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Carol S. W. Tsai whose telephone number is (571) 272-2224. The examiner can normally be reached on Monday-Friday from 8:30 AM to 5:00 PM. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Marc S. Hoff can be reached on (571) 272-2216. The fax number for TC 2800 is (703) 872-9306. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the TC 2800 receptionist whose telephone number is (571) 272-1585 or (571) 272-2800.

In order to reduce pendency and avoid potential delays, Group 2800 is encouraging FAXing of responses to Office actions directly into the Group at (703) 872-9306. This practice may be used for filing papers not requiring a fee. It may also be used for filing papers which require a fee by applicants who authorize charges to a PTO



Art Unit: 2857

deposit account. Please identify the examiner and art unit at the top of your cover sheet.

Papers submitted via FAX into Group 2800 will be promptly forwarded to the examiner.

A handwritten signature in black ink, appearing to read "Carol S. W. Tsai".

Carol S. W. Tsai  
Patent Examiner  
Art Unit 2857

09/02/04